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'HUMAN NEEDS' OF A SINGLE PERSON

In 1943 we published a paper[1] which considered the minimum cost of decent maintenance for a person living alone. It dealt with the outlay required for food, clothing, fuel and lighting, and for some other essential or quasi-essential items, for the household and for personal use. The cost of housing, of travelling to and from work, and of amusements, were excluded from our calculations, the two former items because in most instances they represent rigid overhead charges that the individual must accept, and the last item because bought amusements may be deemed to fall outside the confines of 'human needs'. However, we considered a daily newspaper and a wireless licence indispensable, and allowed for their purchase.

Under war-time conditions the consumption of many essential items was forced definitely below what would normally have seemed appropriate for the satisfaction of 'human needs'. Hence it is not possible to show changes in the actual amounts required for a minimum maintenance,[2] as defined, by means of price indices weighted by the relative cost of the several groups of commodities as computed in 1943, since this would mean disregarding essential changes in consumption. We therefore propose to consider the cost of a 'human needs' maintenance from two different though closely related aspects: we shall compare the outlay required for similar groups of 'human needs' commodities, in 1943 and 1950, and we shall further show what we deem to be the cost of the actual basic requirements for a single person in 1950. Since relatively few single men have a household of their own, the figures in our tables have been calculated primarily for a single woman. We shall, however, show what additional outlay would be needed in order to feed a single man. There is no reason to assume that his basic requirements apart from food, would, on the average, cost more than those of a woman.

It is perhaps appropriate to insert here a word of warning. The 'human needs' pattern of consumption is in part a subjective one. It is related not only to the standard of living of the large community—the nation, or at any rate a considerable part of it—of which the individual is a member, and which standard is capable of being defined statistically, but also to the much less distinct and yet often much more rigid conventions of a person's immediate environment. It is in this aspect that the subjective character of 'human needs' can make itself so strongly and sometimes so painfully felt, in the need for something that is indispensable albeit only as a means to conformity. No general calculations of the cost of a ' human needs ' maintenance can take account of this factor; but no survey of actual ' human needs ' can fully ignore it.

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[1] T. Schulz, '*Human Needs' Cost of Living for a Single Person*, BULLETIN, Vol. 5, No. 9.

[2] In this paper we shall treat the adjectival expressions: low cost, minimum, basic, and 'human needs,' as synonymous.

FOOD

A low cost diet for a person living alone cannot be the same as would be that person's share in such a diet as a member of a family. Dishes that are economical for a number of people may be costly when made for only one person. First, the consumption of fuel for cooking does not decrease in proportion to the number of meals prepared. Further, many foods are habitually sold in certain minimum quantities larger than required for a single meal. Since persons compelled to live on a low cost diet have no refrigerators and, indeed, often scarcely any storage facilities at all, they are compelled to consume any perishable food as quickly as possible. Their arrangements for cooking and washing-up are frequently of the simplest—gas ring, enamel bowl and pail—and thus little suited to the preparation of elaborate meals. If, therefore, a diet of intolerable dullness is to be avoided certain semi-luxury foods have to be allowed in a ' human needs ' dietary for a single person that in a similar dietary for a medium-sized or large family would appear out of place, while some others have to be included in quantities larger than actually called for from a purely nutritional point of view.

In Table I we compare the dietary for a single woman as set out in our paper in 1943 with a similar dietary for 1950 and, further, with the housewife's share available in a ' human needs ' diet for a family of 5 persons, in April 1950.[1] In 1943 as well as in 1950 we assumed that a single person would purchase her full rations; in contrast to this, the housewife's share in the ' human needs ' diet for a family contains more of some foods than one person's ration, and less of others, since in a family all the rations are usually pooled and redistributed according to habits and needs. Our dietaries for a single person also include the full ration of butter,which in the otherwise more varied diet for a family is completely replaced by margarine. In order not to extend Table I unduly foods that form part of the family diet but not of the diets for a single person, are enumerated only in a footnote. The very small amount of greens in the housewife's share reflects the high price of green vegetables in April 1950; we assumed that during that period of acute shortage only 2 lb. per week would be bought for the 5 persons, and that 2 lb. of oranges would serve the family as a supplementary source of vitamin C.

The weekly cost of the diet for a single woman was 8s. 4d. in 1943 and 11s. 11¼d. in 1950.[2] The housewife's share in the family diet would have required an outlay of 10s. 11d., *i.e.*, 11 per cent less than the diet for a woman.

The dietaries shown in Table I would provide adequate nutrition for the average woman of working age; heavy workers may require more and sedent-

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[1] Cf. T. Schulz, *A 'Human Needs' Diet in Spring 1950.* Table III. BULLETIN Vol. 12, No. 5.

[2] If of the high war-time allowance of potatoes of 7 lb., 3 lb. are replaced by 11 oz. of bread, the cost of the full diet would have been lower, by 1½d. in 1943, and by 2½d. in 1950.

TABLE I. *Weekly 'Human Needs' Diet for a Single Woman*

	May 1943					June 1950					April 1950[2]
	Quantity	*Price per Unit*[1]		Cost		Quantity	*Price per Unit*[1]		Cost		Share of Housewife Quantity
		s.	*d.*	s.	d.		*s.*	*d.*	s.	d.	
Meat ...	1 ℔ 3 oz.		*10*	1	0	1 ℔	*1*	*4*	1	4	14 oz.
Corned Beef	2 oz.	*1*	*4*		2	4 oz.	*1*	*4*		4	—
Bacon ...	4 oz.	*1*	*6*		4½	5 oz.	*2*	*0*		7½	3 oz.
Tinned Fish[3]	—		—		5	—		—		7	—
Eggs ...	4 eggs[4]		*1¾*[5]		7¼	2 eggs[6]		*3*		6	1 egg[6]
Cheese ...	3 oz.	*1*	*1*		2½	2 oz.	*1*	*2*		1¾	2 oz.
Milk ...	4 pt.[7]		*4*[5]	1	3¾	3½ pt.[8]		*5*	1	5½	3½ pt.[8]
Butter ...	2 oz.	*1*	*10*		2¾	5 oz.	*1*	*10*		7	—
Margarine	4 oz.		*9*		2¼	4 oz.		*10*		2½	12 oz.
Lard ...	2 oz.		*9*		1¼	2 oz.	*1*	*0*		1½	2 oz.
Sugar ...	8 oz.		*3*		1½	8 oz.		*5*		2½	1 ℔
Jam[9] ...	4 oz.	*1*	*0*		3	4 oz.	*1*	*2*		3½	1 oz.
Syrup ...	2 oz.		*8*		1	2 oz.		*10*		1¼	—
Prunes ...	2 oz.		*9*		1¼	2 oz.	*1*	*0*		1½	2 oz.
Tea ...	2 oz.	*2*	*6*		4	2 oz.	*3*	*8*		5½	3 oz.
Legumes ...	4 oz.		*5*		1¼	4 oz.		*10*		2½	5 oz.
Rice ...	4 oz.		*6*		1½	4 oz.		*9*		2¼	6 oz.
Rolled Oats	1 ℔		*3½*		3½	1 ℔		*7*		7	8 oz.
Flour ...	8 oz.		*3½*		1¾	8 oz.		*4*		2	6 oz.
Bread ...	4 ℔		*2¼*		9	4 ℔		*3*[10]	1	0½	4 ℔ 10 oz.
Potatoes	7 ℔		*1*		7	7 ℔		*1¾*[10]		11½	4 ℔
Carrots[11] ...	3 ℔		*3*[12]		9	8 oz.	*1*	*0*		6	1 ℔ 11 oz.[13]
Greens ...						2 ℔		*6*	1	0	
Condiments	—		—		1[14]	—		—		2½[14]	—[15]
Total Cost of Diet				8	4				11	11¼	10/11[16]

[1] The price unit is : for eggs, one egg ; for milk, one pint ; for all other items, one lb.
[2] BULLETIN, Vol. 12, No. 5. [3] Sardines, ½ tin. [4] One egg in shell, three dried.
[5] Average price. [6] In shell. [7] Three pints fresh full cream milk, one pint reconstituted skimmed milk. [8] Fresh full cream milk. [9] Plum. [10] Approximately.
[11] Old carrots in 1943, new ones in 1950. [12] Average price for carrots and greens.
[13] 14 oz. swedes, 3 oz. greens, 2 oz. onions, 8 oz. beetroot. [14] Assumed. [15] 2½d.
[16] Including 1/8½, the cost of : 12 oz. kippers, 8 oz. beef sausage meat, 1 oz. macaroni, 1 oz. cocoa, 5 oz. oranges.

ary workers taking little exercise in their spare time, somewhat less. People earning their living away from home will frequently be able to purchase cooked meals at a reasonable cost at or near their place of work, and single persons in particular may find it much more convenient to do this than to prepare all their meals at home. In Table II we give a modified low cost dietary for a single woman having 6 meals a week away from home. It will be noticed that the reductions made on this account in the quantities of meat purchased, as compared with those in Table I, are unaccompanied by reductions in the cost of this item. The reason for this is that in all probability the full meat ration would still be wanted, but since much less cooking is done at home, the cheap stewing meat would be replaced by frying meat, which is more expensive but only takes a few minutes to prepare. In spite of the relatively higher price of meat, the cost of this modified diet would have risen from 1943 to 1950 by only about 38 per cent, while that of the diet in Table I would have gone up by 43 per cent. This is due to the fact that in general the cost of meals in British restaurants and works canteens has risen by less than 43 per cent, while on the other hand the cost of vegetables—of

TABLE II

Modified Weekly 'Human Needs' Diet for a Single Woman
(6 Dinners Purchased away from Home)

	May 1943		June 1950	
Excluded from 'Human Needs' Diet (Table I) :	Quantity	Cost	Quantity	Cost
Meat	7 oz.	—	6 oz.	—
Milk, skimmed, reconstituted ...	1 pt.	2¼d.	—	—
Lard	—	—	1 oz.	0¾d.
Legumes	4 oz.	1¼d.	4 oz.	2½d.
Rice	4 oz.	1½d.	4 oz.	2¼d.
Flour	6 oz.	1¼d.	6 oz.	1½d.
Potatoes	6 lb	6d.	6 lb	10d.
Carrots	8 oz.	6d.	4 oz.	3d.
Greens	1 lb 8 oz.		1 lb. 8 oz.	9d.
		1s. 6¼d.		2s. 5d.
Included :	No.	Cost	No.	Cost
Main Meals Out	6	5s. 6d.	6	7s. 6d.
Total Cost of Modified Diet ...		12s. 3¾d.		17s. 0¼d.

which only a small quantity will be required if 6 main meals are eaten away from home—had gone up by considerably more than this.

A man needs on the average 25 per cent more calories than a woman. If he lives alone and is doing his own cooking he is likely to prefer simple and quickly prepared dishes to elaborate ones. Table III sets out the foods which in our paper in 1943 were suggested as acceptable supplements to the diet outlined in Table I. With these additional purchases the cost of the total diet would have been 10s. 5¼d. in 1943, and 14s. 11¾d., in 1950, if all meals were prepared at home, while with the purchase of 6 main meals, the necessary outlay would have risen to 14s. 5d. in 1943, and to 20s. 0¾d. in 1950.

TABLE III

Weekly 'Human Needs' Diet for a Single Man

	Quantity	Cost	
		May 1943	June 1950
Excluded from Diet in Table I :			
Syrup	2 oz.	1d.	1¼d.
Included :			
Pork Sausages	1 lb	1s. 1d.	1s. 6d.
Eggs	2 eggs	3½d.[1]	6d.[2]
Tinned Fish	—	3d.	4¼d.[3]
Bread	3 lb	6¾d.	9½d.
		2s. 2¼d.	3s. 1¾d.
'Human Needs' Diet for a Single Man		10s. 5¼d.	14s. 11¾d.
Modified Diet (Table II) for a Single Man		14s. 5d.	20s. 0¾d.

[1] Two dried eggs. [2] Two eggs in shell. [3] Rise assumed in proportion to rise in price of sardines.

The nutritional intake from the several diets is shown in Table IV. All these figures refer to the dietaries for 1950; they are slightly different from those derived from the dietary for 1943, mainly on account of changes in the rations. It will be seen that the intake from the housewife's share would not

TABLE IV

Nutritional Requirements and Nutritional Intake from 'Human Needs' Diet (Per Day)

	Requirements		Intake[1]				Intake
	Woman	Man	Woman		Man		Share of housewife in Diet for 5 Persons[2]
			Full Diet	Modified Diet *excl.* 6 Dinners	Full Diet	Modified Diet *excl.* 6 Dinners	
Calories	2,500	3,000	2,500	2,000	3,150	2,650	2,500
Protein, gm. ...	60	70	77	59	103	85	75
Calcium, gm. ...	0.8	0.8	0.8	0.7	1.0	0.9	0.8
Iron, mgm. ...	10	10	17	12	22	17	15
Vit. A, Internat. Units	3,000	3,000	3,800	2,700	3,900	2,800	2,030
Vitamin B_1, mgm.	0.75	0.90	1.75	1.15	2.25	1.65	1.5
Vitamin C, mgm.	30	30	44	13	44	13	29
Animal Protein :							
gm.			*30*	*26*	*40*	*36*	*31*
of total protein requirements			*50%*	*43%*	*57%*	*51 %*	*52*

[1] The figures are derived from the dietaries for June 1950 ; they differ slightly from those based on the dietaries for May 1943.

[2] April 1950, BULLETIN, Vol. 12, No. 5.

be much dissimilar from that available from the dietary for a single person, with the exception of the vitamins A and C, of which—owing to the temporary scarcity of fresh vegetables—the family diet in April 1950 would have supplied less than the optimum amount. If 6 meals are bought away from home each meal would have to provide on the average 600 calories, 4 gm. first class and 17 gm. second class protein, 160 mgm. calcium, 5 mgm. iron, 1250 I.U. vitamin A, 0.7 mgm. vitamin B_1, and 36.5 mgm. vitamin C, in order to bring the modified diet up to the standard of the full diet. Some meals, especially those offered in a well-run works canteen, may supply more nourishment than this; but a satisfactory intake of vitamin A and vitamin C could be attained only if fresh vegetables are consumed regularly.

CLOTHING

In 1943, the amount of clothing that could be bought within a year was strictly limited by means of clothing coupons. The 'human needs' purchases suggested by us for that year are shown in Table V; they would have used up all the coupons that were available. The cost of the several items as computed in 1943 is given side by side with that in 1950. For both years the figures are based on what we found to be the lowest prices generally charged for garments of a reasonably reliable quality. The cost of 'sundries' in Table V, in 1950, has been calculated in proportion to the average rise in cost of the other items—excluding shoe repairs and dry cleaning—from 1943 to 1950. Both shoe repairs and dry cleaning have risen in price less than the average price of inexpensive clothing; the increase in cost from 1943 to 1950, as recorded in individual household accounts, amounted to between 30 and 35 per cent.

The annual cost of the clothing enumerated in Table V had gone up from 104s. in 1943 to 184s. 9d. in 1950, and the weekly cost had thus risen from 2s.

TABLE V

Utility Clothing for a Single Woman (*War-Time Allowance*)

	1943 s.	1943 d.	1950 s.	1950 d.
1/5 Coat	13	6	19	0
1/6 Raincoat	6	0	7	9
Jumper or Jersey	9	6	20	0
Skirt	12	6	30	0
Shoes	20	0	35	0
4 Pairs Stockings	7	4	12	0
2 Vests	4	0	6	0
2 Knickers	4	6	8	6
Bodice	5	3	12	0
Nightdress	6	3	12	3
Sundries	4	0	7	3
Shoe Repairs and Dry Cleaning	11	2	15	0
Total per Year...	104	0	184	9
Per Week	2	0	3	6¾

to 3s. 6¾d. Against this increase of nearly 78 per cent the Ministry of Labour index only shows a rise in the retail price of clothing of about 16 per cent.[1] This very marked discrepancy is probably due to the fact that our figures of cost refer in both years to low-priced utility clothing only, while the Ministry of Labour index covers all price ranges, including those of non-utility clothing. The gradual upward extension of the price range of utility clothing and the concomitant relief from purchase tax of the affected items, no doubt exercised a strong effect in depressing the upward trend of the retail price index of all clothing.

The quantity of clothing that could be bought per person in 1943, was certainly less than people would consider essential at the present time. Some of the items enumerated may, indeed, last longer than assumed by us, if a woman is a discriminating buyer and, moreover, takes great care of her wardrobe. On the other hand, a garment that wears badly and must be replaced before its time can make a big inroad into a small budget. Also, no special provision apart from the small sum allowed for ' sundries ' has been made for the purchase of a slip or petticoat, bedroom slippers, gloves, handkerchieves, scarf, and handbag, and some of these items could therefore only be bought out of savings effected on others. A slightly less spartan budget might allow for the additional items set out in Table VI. They only represent a modest increaseof the war-time allowance of clothing; but they would require another 2s. 6d., raising the total cost of ' human needs ' clothing in 1950 to about 6s. per week. The cost of clothing for a man depends much more than that for a woman on the type of work he is doing; yet on the average an annual outlay of about £11 would probably also provide for his needs.

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[1] This figure has been obtained by assuming that the Ministry of Labour index is continuous for this period and that the new Ministry of Labour index of retail prices, which started on June 17th, 1947, corresponds for the sub-group of clothing to the figure for July 1st, 1947, of the old index.

TABLE VI

Supplementary Clothing

	1950 s.	1950 d
1/3 Short Summer Coat	20	0
Blouse	20	0
Dress	50	0
Overall	30	0
Hat	20	0
Total per Year	140	0
Per Week	2	8¼

OTHER ITEMS

The cost of fuel and lighting was assessed by us in 1943 at 2s. a week; this figure, of course, only referred to actual consumption and made no allowance for surcharges, which are fairly general when a single person has only one room and pays a fixed sum for fuel and lighting. For the purpose of this paper, such surcharges must be considered as part of the rent, and hence disregarded in this context. From 1943 to 1950, the Ministry of Labour index of the retail price of fuel and lighting rose by about 29 per cent.[1] By applying this to our figure for 1943, of 2s. per week, we find that the cost in 1950 would have gone up to 2s. 7d.

The 'human needs' cost of certain other items is set out in Table VII. The outlay on most of these items had to be estimated, in 1943 as well as in 1950. This does not, of course, mean that these figures are completely arbitrary, but only that of necessity they could not be computed from detailed lists of the cost of specific items, as were most of our other figures. The rise in the cost of soap and cleaning materials from 1943 to 1950 is based on the rise in the cost of cheap toilet soap, which is approximately paralleled by the rise in the cost of other cleaning materials. The rise in the cost of laundry has been calculated from data in individual laundry books; in assessing the total outlay on laundry it has been assumed that everything except

TABLE VII

'Human Needs' Outlay on 'Household' and 'Sundries' (per Week)

Household	1943 s.	1943 d.	1950 s.	1950 d.	Sundries	1943 s.	1943 d.	1950 s.	1950 d.
Soap ... ... Cleaning Materials		6[1]		10[2]	Newpapers ...		9		9
					Wireless Licence ...		2¼		4½
Laundry		6		10	Personal Expenses[5]	1	6¾	2	4½
Replacements ...		6[3]		10[4]					
	1	6	2	6		2	6	3	6

[1] [2] [3] [4] If 6 main meals are bought away from home, [1]4d., [2]6¾d., [3]5d., [4]8¼d.

[5] Stamps, writing materials, toilet requisites, mending materials, etc.

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[1] Computed in the same way as our corresponding figure for clothing.

bed linen is washed at home. The cost of replacements has been raised in proportion to that of the two other 'household' items, which seemed reasonable.

The cost of newspapers was the same in 1943 and 1950, and 9d.per week would buy a daily penny paper and a local weekly paper. The price of a wireless licence has gone up from 10s. to £1 a year, or from 2½d. to 4½d. a week. The rise in personal expenses from 1s. 6½d. to 2s. 4½d. has been assumed, but the figure remains a very modest one; 10 cigarettes of the cheaper brands would take up to 1s. 3½d. of it, and if the full sweets ration—5 oz. per week—is bought, 7½d. will be required for this, though in this case a little less bread might be consumed and about 1½d. saved on that.

The total cost of the items in Table VII was 4s. in 1943 and about 6s. in 1950. If 6 meals are bought away from home the outlay on cleaning materials and replacements would be less than if all the cooking is done at home. In 1943 we assessed the reduction at 3d.; a proportionate reduction in 1950 would amount to 5d.

SUMMARY

The total 'human needs' cost of maintenance for a single woman, excluding rent, fares to work, and amusements, is set out in Table VIII. We first show the figures as given in our paper for 1943 and compare them with those referring to similar items in 1950. If all the meals are prepared at home, the total outlay required amounted in 1943 to 16s. 4d. and in 1950 to 24s. 1d. With 6 meals bought away from home, the cost was 19s. 6¾d. in 1943, and 28s. 1¼d. in 1950. If we grant a somewhat higher standard of 'human needs' in peace-time than in war-time, and accordingly allow for the purchase of some additional clothing and replacements in 1950, the outlay necessary in 1950, rises to 27s. 7¼d. per week, if all the meals are cooked at home, and to 31s. 5¾d., if 6 meals are purchased in a canteen or British restaurant.

TABLE VIII

'Human Needs' Expenditure of a Single Woman, excluding Outlay on Rent, Fares, and Amusements (per Week)

	All Meals at Home				6 Dinners Out			
	1943		1950		1943		1950	
	s.	d.	s.	d.	s.	d.	s.	d.
Food	8	4	11	11¼	12	3¾	17	0¼
Clothing	2	0	3	6¾	2	0	3	6¾
Fuel and Lighting	2	0	2	7	1	6	1	11¼
Household	1	6	2	6	1	3	2	1
Sundries	2	6	3	6	2	6	3	6
	16	4	24	1	19	6¾	28	1¼
Additional Clothing			2	8¼			2	8¼
Additional Household Replacements ...				10				8¼
Total			27	7¼			31	5¾

T. SCHULZ.

THE POST-WAR COST-OF-LIVING

I. The Cost-of-living by Social Stratum

The publication of another National Income White Paper makes it possible for the cost-of-living indices for working-class and middle-class previously published to be brought up-to-date. The first step was to prepare national price indices with a 1938 base, both for time and for weighting, i.e. ' Laspeyre ' indices. The task was complicated this year by the fact that only for 1948 are we given estimates of consumer expenditure in 1938 prices, and thus implied price-relatives with a 1938 time base. Even for 1948 only broad groups of commodities are given.

Another set of fixed price estimates are available, though, consumers' spending for 1946–9 being revalued at 1948 prices and estimates for sub-groups of commodities given. However, the procedure followed last year cannot be directly repeated. The principle then was to reweight the price-relatives for each sub-group in each year by pre-war spending on that sub-group, giving approximate 1938-weighted indices for the commodity groups —only ' approximate ' because we cannot reweight commodities inside each sub-group. The partial information now provided suggested several ' linking ' methods to revise my estimates for 1946–8 and provide new ones for 1949. The method I actually chose rested on two clear and reasonable assumptions, as is explained in the technical appendix. Briefly, what we are doing now is to compare the current-weighted ' Paasche ' indices for 1948 (1938=100) from both White Papers and assume that if revised price estimates led to a revision of the Paasche price index there would be corresponding alterations to the approximate Laspeyre indices. This gave us the index wanted for 1948. The price indices provided by the 1948-price table were weighted by 1938 purchases and applied to these revised Laspeyre indices for 1948, to give us approximate Laspeyre indices for other years. In some cases, where information on sub-sections was not available, we used the Paasche indices as approximations to the Laspeyre indices required, in the same manner as previously. Then the total index was weighted by 1938 purchases. Another possible method of linking for 1946 and 1947 was tried, and it gave the same total index for 1947, and there was a difference of only one point for 1946.

This correction for the apparent official revision of estimated price increases from 1938 to 1948, had to be used only in a few cases, of which one was that of Food, which now shows a price increase two points higher, though the new calculations for 1946 and 1947 show no change. In other cases slightly different values are given by the new method for 1946 and 1947, even where 1948 estimates are unchanged. Another upward revision rather more conspicuous was for Services, due to the provision of information allowing a separate price increase to be calculated for Domestic Service, whose cost is shown to have more than doubled. The separate calculations for ' Domestic ' and 'Other' Services amount to a new Laspeyre index for Services differing substantially from the index previously used because of the smaller relative weight attached to domestic service in post-war years (the quantity of domestic service apparently being not much more than a third of pre-war). Otherwise, the adjustments are minor, though the total effect is to shift the national price index unward by 2—3 points for all years.

Table I shows the result of these estimates. It is clear that retail price rises, despite devaluation, have definitely slowed down throughout the economy. Particularly noteworthy are the slowing of price rises for ' other goods ', since this includes a wide range of merchandise such as stationery, jewellery, and sports goods, and the fall in prices of some goods now in freer supply than formerly (such as fish, fruit, shoes and hardware)—an indication of some return of a ' buyer's market '.

TABLE I

Approximate Laspeyre National Price Indices (1938=100)

	1946	1947	1948	1949
1. Food	141	151	162	168
2. Drink	248	251	289	285
3. Tobacco	259	338	390	397
4. Rent	107	111	112	113
5. Fuel and Light	145	149	163	166
6. Durable Household Goods ...	209	223	239	241
7. Other Household Goods	136	153	164	167
8. Clothing, footwear	186	191	210	221
9. Reading Matter	115	119	119	120
10. Motoring	169	174	180	191
11. Other Travel	114	126	132	133
12. Communications	132	135	135	138
13. Entertainments	169	171	171	171
14. Domestic Services	205	213	218	218
15. Other Services	136	144	154	158
16. Other goods...	215	224	232	232
17. Income in kind of H.M.F. ...	147	159	170	175
20. Personal Expenditure Abroad ...	249	255	257	270
Total	162–3	173	186–7	190–1

We can compare this 1938-weighted *national* index with movements in a 1938 weighted *working-class* price index to infer something about the price movements of the rest of the community, broadly, if illogically, called the ' middle-class '. The principle used is that national price movements are a weighted average of working-class and middle-class price movements. A working-class index is obtained by bringing Professor R. G. D. Allen's calculations up to date, with the help of the Interim Index of Retail Prices, correcting for changes in beer strength to make it comparable with the national price indices.[1]

The effect of the upward revision of the national price index is to raise the estimate of the middle-class cost-of-living index for all post-war years, to a rather greater extent, in fact by about 5 points, since the working-class

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[1] For Professor Allen's estimates see L.C.E.S. BULLETIN, Vol. XXVII, p. 15 ; and for adjustments see Institute BULLETIN, Vol. 11, p. 127. It will be noted that the latest National Income White Paper shows a rise in tobacco prices from 1948 to 1949, which though slight was sufficient almost to offset the fall in drink prices due to the lowering of duty in the 1949 Budget. (Cf. the fall for ' Drink and Tobacco ' in the Interim Index of Retail Prices).

TABLE II

Working-class and Middle-class Cost of Living (1938=100)

	1946	1947	1948	1949
National price index	162–3	173	186–7	190–1
Middle-class cost of living	175–6	186–7	199	201–2
Working-class cost of living	151–2	161–2	175–6	181–2

index is unchanged.[1] Only for 1947 can we find enough information for working-class living costs to make a detailed sectional analysis of living costs by social class and the table published last year is shown brought up to date as Table III here. There are minor changes in middle-class relatives throughout, but they are not predominantly upwards, and clearly the isolation of domestic services has been mainly responsible for the upward revision in the total middle-class index.

TABLE III

Working-class and Middle-class Price Relatives for 1947 (1938=100)

Group	National price relative	Working-class price relative	Middle-class price relative
1. Food	151	137	187
2. Drink	251	253	248
3. Tobacco	338	339	336
4. Rent	111	111	111
5. Fuel and Light	149	150	146
6. Durable Household goods ...	223	206	240
7. Other Household goods	153	153	153
8. Clothing	191	174	205
9. Reading matter	119	119	119
10, 11. Motoring and Travel ...	147	135	151
12. Communications	135	135	135
13. Entertainments	171	178	159
14. Domestic Service...	213	213	213
15. Other Services	144	144	144
16. Other Goods	224	185	235
17. Income in kind of H.M. Forces	159	159	159
20. Travel abroad	255	—	255
Total	173	161–2	186–7

It will be noted from Table II that the slowing up of the rise in living costs is much more marked for the middle-class than for the working-class, on these calculations. This is shown by estimates of the ' progressive ' effect of price changes measuring the extent to which middle-class price increases have exceeded working-class.[2] From Table II, this can be calculated as follows :—

[1] Doubtless an upward revision of the working-class estimates is necessary by now, and if this is so, then the middle-class estimates may be slightly too high, and have lead to the divergence between the index shown in Table II and the series calculated directly from the Retail Prices Index (BULLETIN, Vol. 12, p. 124). One minor change since the last estimate is that the approximate Laspeyre middle-class index is considered a better price series for spending of foreign tourists here than the Paasche series given, since tourists have an expenditure pattern not dissimilar to that of the middle-class.

[2] See BULLETIN, Vol. 11, p. 128.

1946–7	1947–8	1948–9
1.00	0.98	0.98

The low level of this indicator for 1948–9 is odder than that for 1947–8, in view of the fact that the rise in prices was less. The increase in the middle class cost of living for 1948–49 was in fact less than a half of that in the working-class index.

(These conclusions depend on the rather divergent movements between 1948 and 1949 of two indices, the White Paper index, and the Interim Index of Retail Prices, which we might expect to move in rather close similarity. For a discussion of this divergence see following article ‘ Index Numbers of the Cost of Living, 1948–49 ’ in this BULLETIN.

In view of the fact that items within the broad commodity groups of the Interim Index appear to be moving differently for the working-classes and the rest of the public, I shall no longer publish the monthly series of the middle class cost-of-living, which was only of value as long as price movements within commodity groups for different classes were parallel, so that divergence in movement of the cost of living depended mainly on differences in weighting of commodity groups.)

We can also calculate approximate cost of living indices for more clearly defined strata by using the methods described previously.[1] The results obtained are shown in Table IV.

TABLE IV

Cost of living indices for different social strata (1938=100)

		1946	1947	1948	1949
‘ Lower ’ middle class[1] :	Food	137	147	158	164
	All Items	157	168	181	185
‘ Upper ’ middle class[1]:	Food	232	256	260	245[2]
	All Items	188	199	211	213
Salaried ‘ lower ’ middle class :	Food	140	150	161	166
	All Items ...	159	169	182	185
All salaried staff :	Food	142	152	163	168
	All Items	162	173	186	190

[1] The division between ‘ upper ’ and ‘ lower ’ is the £500 income level in 1938.

[2] In as far the dissimilar movements in the Retail Prices' Index and the National Income White Paper Index are due to technical, as opposed to social, factors, the fall in this index is misleading.

Revisions have increased the figures for the ‘ upper ’ middle class, which is only to be expected since the isolation of (and separate price index for) domestic service particularly affects them. There is only a slight tendency for the price changes from 1948 to 1949 to affect the ‘ upper ’middle class less than other middle class strata, and the difference would not appear statistically meaningful.

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[1] BULLETIN, Vol. 10, p. 265. One point not stated in that series of papers is that non-working-class with investment income below £250 p.a. in 1938 were estimated to be receiving £160m. and spending on a budget similar in composition to that of salaried workers with £250 to £500 p.a. In view of the absence of major changes in income data, any revisions of expenditure were assumed to refer to the ‘ upper ’ middle class, which is the final residual in these estimates.

II. THE COST-OF-LIVING BY INCOME LEVEL

The difficulty about even these stratified indices is that they cover large groups. The cost-of-living index must vary inside the group rather widely, and it is of little use as a guide to individual cases. This is partly because of variation in the 'typical' budget within the stratum concerned and partly because of deviations in individual cases from 'typical' budgets. We cannot make any provision for the latter, except to point out that the deviation from the index may be substantial in extreme cases. Thus a person who spent pre-war one-third of his total outlay on wine and spirits, one-third on pipe tobacco and cigars, and one-third on potatoes and vegetables, would find that his cost of living index in recent years has been about 310 to 320 (1938=100); while someone on the same income who spent his outlay one quarter on edible fats, one quarter on meat and bacon, one quarter on controlled rent and one quarter on electricity, has a cost of living index of 110 to 120 (1938=100).[1]

However we can say a little more about more normal householders. What we really need are indices for the average budgets at each income level. Since we neither have the budgets nor the prices needed, it is a case of making bricks without straw (or clay). There is however just enough information to make a rough attempt.

The underlying principle is that if we assume constant marginal propensities to consume for each commodity, we have a relation between total expenditure per family and the appropriate cost-of-living index. Professor R. G. D. Allen and Professor Sir Arthur Bowley have shown this relation is as follows[2] :

$$I_e = I + 100 \left(1 - \frac{\bar{e}}{e}\right) \Sigma (\rho_t k_t)$$

where I_e is the cost-of-living index for a family with expenditure 'e'; I is the cost-of-living index for the average expenditure of all families '$\bar{e}$'; ρ_t is the differential between the price relative for a commodity and I; and k_t is the proportion of marginal income devoted to that commodity.

Although the values for 'ρ' and 'k' for individual commodities are unknown, the next step is to find $100\, \Sigma (\rho_t k_t)$, which I shall call '$R$', for each post-war year.

The method is to take the formula as applicable to the nation as a whole, for which a consumer's price index has been estimated above, and then to deduce that it must therefore provide a correct value for the cost-of-living index appropriate to mean working-class expenditure, which we have also estimated above,[3] *i.e.* if I_w is the working-class cost-of-living index, and e_w

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[1] The index would however be rather meaningless because he would have been obliged to shift to more expensive substitutes.

[2] 'Family Expenditure,' p. 16.

[3] Strictly we have estimated the cost-of-living weighted by the mean outlay on each item, but a corollary of the formula above when applied to any social group is that the price index of the mean outlays on each item is identical with the price index corresponding to the mean total expenditure, because then : $\bar{e} = e$ and $I_e = I$.

average working-class expenditure, $I_w = I - R\left(1 - \frac{\bar{e}}{e_w}\right)$

We also know from the Ministry of Labour budgets the mean working-class family expenditure, which came to £230 per annum. There are various ways of finding the ratio between mean national and mean working-class expenditures in 1938. It was estimated previously[1] that the working-class had been so defined as to include 84 per cent of the population, and to be responsible for 55 per cent of consumers' expenditure in 1938. This suggests that national average expenditure *per head* was 1.53 time working-class average expenditure. But working-class families tend to be slightly larger than the national average, so that the ratio between average expenditures *per family* would have been slightly less than this, but only slightly, since the working-class is the great majority of the nation. This suggests a ratio of 1.5 and average national household expenditure of £345. One check is provided by post-tax personal distributed incomes, as shown in the National Income White Paper. Since nearly all incomes are included and institutional forms of saving are excluded, these incomes will stand in very close relation to the corresponding expenditures.[2] Assuming 20½ million incomes in the 'under £250' group[3] (which includes some non-working-class on any definition), average income, per *income*, was £120 for the 'under £250' group, and £176 for the whole nation; suggesting a ratio of 1.47[4] It is not certain how 'incomes' per family vary socially, when small investment incomes are included. Another check is provided by the fact that an average household expenditure of £345 implies there were 12½ million households (obtained by division of £345 into £4287 m., total consumption spending) and this is compatible with other estimates.[5]

I propose therefore to take $\frac{e}{e_w}$ to be 1.5. On this assumption we have by inserting the appropriate indices for each year:

$$R_{1946} = 22$$
$$R_{1947} = 23$$
$$R_{1948} = 22$$
$$R_{1949} = 18$$

We can now use the value of R in the formula to find the cost-of-living for any expenditure level. Thus for 1946, I=162.5 and so

$$I_e = 162.5 + 22\left(1 - \frac{345}{e}\right).$$

This formula and others similar yield the results shown in Table V.[6]

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[1] BULLETIN, Vol. 10, p. 186.

[2] For 1938, the total post-tax incomes shown in Table 10, Cmd. 7933, were £4130 m. whereas total consumers' spending was £4287 m. (Table 21), if we exclude income in kind of H.M. Forces.

[3] BULLETIN, Vol. 11, p. 256.

[4] This ratio is not sensitive to the numbers assumed in the lowest bracket.

[5] Cf. Abrams' estimate of 12.3 m. in 'Condition of the British People'. These checks, in view of the lack of precise indentification of definition, are almost suspiciously good.

[6] I do not show values for below £200 or above £700, because it is unreasonable to expect marginal propensity to consume to be constant outside this range, and because the assumption of linearity may introduce implicit negative expenditures on luxuries by those with less than £200.

TABLE V

Cost-of-living indices (1938=100) according to household expenditure in 1938

Household expenditure in 1938 (£)	*Cost-of-living index* 1946	1947	1948	1949
200	147	156	171	177
250	154	164	178	184
300	159	170	183	188
350	163	173	187	191
400	166	176	190	193
450	168	178	192	195
500	169	180	193	196
600	172	183	196	198
700	174	185	198	200

These estimates indicate as before that the higher was pre-war income the higher was the price rise from 1938 to 1946, but the lower was the price rise from 1946 to 1949—the net effect however being to leave 1949 price indices still somewhat higher for the higher income brackets. (See Diagram A).

From Table V we can deduce Table VI showing how large a *post-tax* income in post-war years would be required to buy the living standard purchased by given post-tax incomes in 1938.

TABLE VI

Income levels (after tax) in post-war years comparable to a given income in 1938

Income after tax in 1938 (£)	*Corresponding income after tax in:* 1946	1947	1948	1949
200	295	315	340	355
250	385	410	445	460
300	480	510	550	565
350	570	605	655	665
400	660	705	760	770
450	755	805	860	875
500	845	900	965	980
600	1030	1095	1175	1190
700	1215	1295	1385	1400

Finally, on the assumption that income is wholly earned income, we can estimate *pre-tax* incomes corresponding to given pre-tax incomes in 1938. Table VII was constructed as follows: From the first column the appropriate income tax was deducted, the tax rates used being these in force in 1938–9 financial year. Some of the income made in 1938 was in fact taxed at a higher rate, but this was due to the war, and we are concerned with peace-time equivalents. Then this was multiplied by the appropriate cost-of-living index from the Allen-Bowley formula to give the third column estimates. A national price index of 194 was used, allowing for increases in food and petrol prices since 1949, which gives a value of 19 for R. Lastly, the post-tax figures in the third column were grossed up to find the equivalent

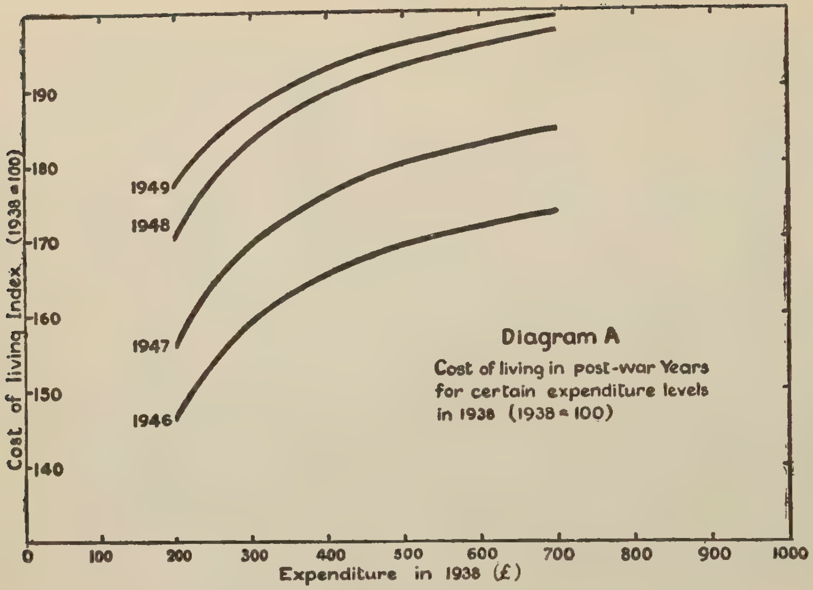

Diagram A

Cost of living in post-war Years for certain expenditure levels in 1938 (1938 = 100)

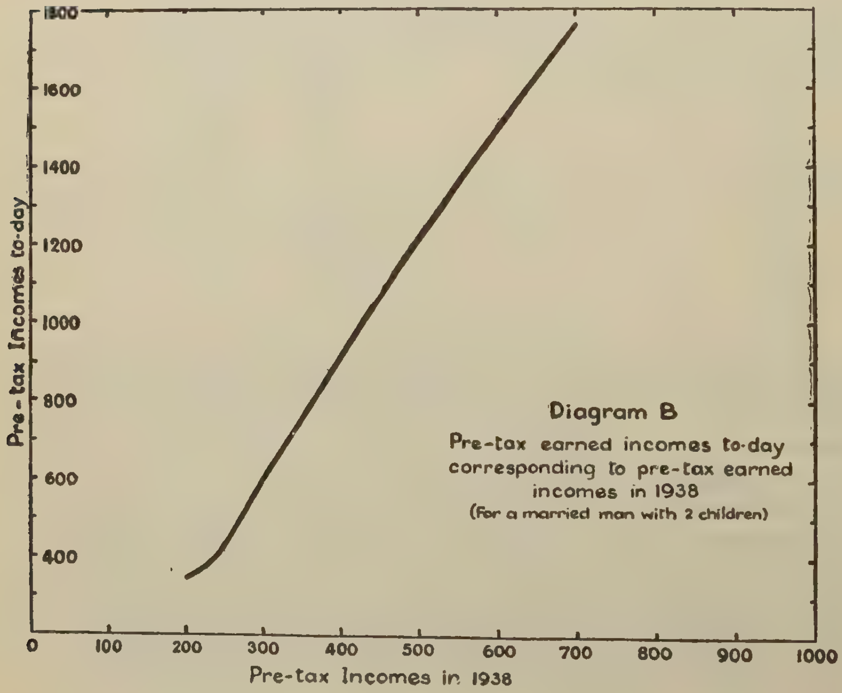

Diagram B

Pre-tax earned incomes to-day corresponding to pre-tax earned incomes in 1938

(For a married man with 2 children)

pre-tax incomes, deduction of £13 family allowance being made for the second child.[1] The results of Table VII are shown graphically in Diagram B.

TABLE VII

Pre-tax earned Incomes in 1938 and pre-tax earned incomes to-day with equivalent purchasing power.

(*For a married man with 2 children*).

Income in 1938 (£)		*Corresponding income to-day (£)*	
Pre-Tax	*Post-tax*	*Post-tax*	*Pre-tax*[1]
200	200	360	345
250	250	465	410
300	300	575	600
350	350	680	750
400	398	780	900
450	445	880	1065
500	492	985	1225
600	576	1160	1500
700	654	1325	1760

[1] Allowing for family allowance of £13 p.a. on the second child.

Thus the table indicates that for this size family £1,225 gross income is needed to buy the living standard of £500 gross pre-war. Perhaps it is necessary to point out that I am not suggesting that people *should* have the same real incomes as pre-war. The commitments of the economy to produce higher exports, more social services, more arms, and more investment, almost fully absorb the great increase of output over pre-war, so that consumers' real incomes are hardly in aggregate larger. If, therefore, we need higher real incomes for the agricultural community, for those previously suffering great hardship from the inadequacy of incomes to maintain health, and for those working in industries intrinsically unattractive (such as coalmining), then the real incomes of others cannot reach pre-war levels. My purpose is to provide a rough yardstick, not a proposed salary scale. It will be seen that the proportionate increase in income required to maintain 1938 standards increases sharply the higher we go up the income scale.

How much reliance can be placed in these results ? They were obtained in effect by interpolating on the Allen-Bowley function connecting income and cost-of-living. This function is reliable to the extent that there are linear relations between commodity consumption and family expenditure, though budget investigations do strongly indicate some such sort of relation. The function was fitted however, to only two points, the point of national means and the point for mean working-class expenditure. One of these is provided by the National Income White Paper, based on the Central Statistical Office price investigations, and the other is inferred from estimates by the Ministry of Labour of price rises in working-class goods. They seem fairly reliable, though possibly the latter point would be shifted to a slightly higher level in terms of cost-of-living if a revision were made now. The two points are moreover rather inconveniently close together for fitting, so that the slope of the curve is sensitive to small inaccuracies in either point. Finally, individual families may distribute their expenditure very differently from the mean distribution of an income group and this may cause them to be well off the Allen-Bowley curve.[1] Broadly speaking, households with many children will spend a higher proportion on necessities, especially food, and hence tend to lie below the curve, while those with one or no children will for the opposite reason tend to lie above. There is one particular bias upward in that these estimates ignore the existence of free services, notably medical services, in post-war years : on the other hand they have a downward bias in as far as there has been a net quality decline.

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[1] No deduction was made for social security contributions, which are treated for this purpose as compulsory savings for a time when the employee will be unemployed, sick or old, the employers' contribution and government grant being treated as additions to the incomes of those who are in receipt of benefit. Looked at in this way such saving is subject to a cost-of-living index similar to that of spent income. In as far as those in the middle brackets receive attention and grants under the health service, the estimates slightly overstate the income required to reach a pre-war living standard. No allowance is made for the extra educational expenditure, for any other indirect benefits from Government spending, nor for tax allowances other than wife's, children's and ' earned income '.

The advantage of these calculations is that they do take some account of the principle that the higher one's income was in 1938 the higher proportion was spent on luxury goods, an important principle in view of the much greater price rises for luxury goods than for basic foodstuffs. Any estimate using this principle, however roughly, would seem more useful than overall working-class or national indices for most comparisons. The widespread interest in these matters seemed to me to justify an attempt to provide rough estimates. However it cannot be too strongly emphasised that they are based on inference and assumption, not on the relevant budget and price data (which of course do not exist).

DUDLEY SEERS.

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[1] This is only true of course if their differences from the standard budget are ' biassed ' towards items which have increased in price either more or less than average. Differences which are random in this respect will not affect the cost-of-living.

TECHNICAL APPENDIX

Weighting Analysis of National Price Index

(Asterisks refer to revised estimates, and summation signs to commodity groups, except that the subscript ‘s’ denotes summation by sub-group. Otherwise the notation is conventional.)

From :—

Cmd. 7649 Table 21 $$\frac{\Sigma_s\, p_{48}\, q_{48}}{\Sigma_s\, p_{38}\, q_{48}} \tag{1}$$

and thus : $$\frac{\Sigma\, p_{48}\, q_{48}}{\Sigma\, p_{38}\, q_{48}} \tag{2}$$

Cmd. 7933 Table 23 $$\frac{\Sigma^{*} p_{48}\, q_{48}}{\Sigma^{*} p_{38}\, q_{48}} \tag{3}$$

Cmd. 7933 Table 22 $$\frac{\Sigma_s\, p_t\, q_t}{\Sigma_s\, p_{48}\, q_t} \tag{4}$$

From (1) we obtain approximate Laspeyre Indices as follows :—

$$\frac{\Sigma\left(\Sigma_s\, p_{38}\, q_{38} \times \dfrac{\Sigma_s\, p_{48}\, q_{48}}{\Sigma_s\, p_{38}\, q_{48}}\right)}{\Sigma\, p_{38}\, q_{38}}$$

If $$\frac{\Sigma_s\, p_{48}\, q_{48}}{\Sigma_s\, p_{38}\, q_{48}} \bumpeq \frac{\Sigma_s\, p_{48}\, q_{38}}{\Sigma_s\, p_{38}\, q_{38}}$$

this $\bumpeq$ $$\frac{\Sigma\, p_{48}\, q_{48}}{\Sigma\, p_{38}\, q_{38}} \tag{5}$$

From (2) and (3) we obtain a correction factor for revision and applying it to (5) get a revised approximate Laspeyre index :—

$$\frac{\Sigma\, p_{48}\, q_{38}}{\Sigma\, p_{38}\, q_{38}} \times \frac{\dfrac{\Sigma^{*} p_{48}\, q_{48}}{\Sigma^{*} p_{38}\, q_{48}}}{\dfrac{\Sigma\, p_{48}\, q_{48}}{\Sigma\, p_{38}\, q_{48}}}$$

i.e. $$\frac{\Sigma^{*}\, p_{48}\, q_{38}}{\Sigma^{*}\, p_{38}\, q_{38}} \tag{6}$$

the required index.

From (4) and (1) we get approximate Laspeyre sectional indices for other years.

i.e. $$\frac{\Sigma_s\, p_t\, q_t}{\Sigma_s\, p_{48}\, q_t} \times \frac{\Sigma_s\, p_{48}\, q_{48}}{\Sigma_s\, p_{38}\, q_{48}}$$

If $$\frac{\Sigma_s p_t\ q_t}{\Sigma_s p_{48}\, q_t} \bumpeq \frac{\Sigma_s p_t\ q_{38}}{\Sigma_s p_{48}\, q_{38}}$$

and $$\frac{\Sigma_s p_{48}\, q_{48}}{\Sigma_s p_{38}\, q_{48}} \bumpeq \frac{\Sigma_s p_{48}\, q_{38}}{\Sigma_s p_{38}\, q_{38}}$$

this $$\bumpeq \frac{\Sigma_s p_t\, q_{38}}{\Sigma_s p_{38}\, q_{38}}$$

and we obtain approximate Laspeyre group indices by weighting as follows :

$$\frac{\Sigma \left(\Sigma_s p_{38}\, q_{38} \times \dfrac{\Sigma_s p_t\ q_{38}}{\Sigma_s p_{38}\, q_{38}}\right)}{\Sigma\, p_{38}\, q_{38}}$$

which $$\bumpeq \frac{\Sigma\, p_t\ q_{38}}{\Sigma\, p_{38}\, q_{38}}$$

i.e. $$\bumpeq \frac{\Sigma\, p_t\ q_{38}}{\Sigma\, p_{48}\, q_{38}} \times \frac{\Sigma\, p_{48}\, q_{38}}{\Sigma\, p_{38}\, q_{38}}$$

Applying the same correction factor to the second fraction, if necessary,

this $$\bumpeq \frac{\Sigma^*\, p_t\ q_{38}}{\Sigma^*\, p_{38}\, q_{38}} \qquad \ldots\ldots\ldots\ldots \qquad (7)$$

the required index.

It will be noted that two basic assumptions are involved : (*a*) that a change of weighting base *for sub-groups* does not affect the sub-group relative, and (*b*) that revision of price series affects Paasche and Laspeyre indices for 1948 to the same relative extent.

The alternative method which was tested was to apply the same correction factor directly to indices of Type (1) and then to obtain indices for 1946 and 1947 by linking with indices of Type (4).

INDEX NUMBERS OF THE COST-OF-LIVING, 1948–49

I

Those who wish to measure changes in the cost of living between 1948 and 1949 now have two official sources on which to base their calculations: the Interim Index of Retail Prices, and the price-index which is implied by the fixed-price series given in Table 22 of the latest National Income White Paper.[1] A crude comparison between the two indices yields the following results :—

TABLE I

Price-Index for 1949, Average 1948=100

	Retail Price Index	*White Paper Index*[2]
Food	105.4	102.7
Rent, Rates and Water Charges ...	100.5	100.7
Clothing	107.7	104.7
Fuel and Light	102.0	101.7
Household Durable Goods ...	100.6	101.0
Miscellaneous Goods	102.2	100.6
Services	100.7	101.9
Drink and Tobacco	99.3	100.3
Total	102.8	101.9

Since the indices differ both in scope and in construction, it is not surprising that they indicate different price-movements. The Interim Index of Retail Prices is concerned with the prices of those goods and services which are typical of working-class purchases, and it combines these prices using weights reflecting the pattern of working-class consumption in 1937–8. The White Paper index has a comprehensive coverage of the prices of all[3] goods and services which fall within the definition of personal[4] consumption expenditure, and uses as its weights the pattern of that consumption in 1949. Nevertheless, the implications of a divergence between the two indices are of some importance, and warrant closer examination.

Any divergence between the Interim Index of Retail Prices and the White Paper index must be capable of explanation in terms of :—

1. Differences in the price changes falling within the scope of each index; and/or
2. Differences in the weights which are used to combine the price-changes of individual items into an index.

In the next section of this paper, an attempt will be made to indicate the extent to which the divergence between the indices can be attributed to differences in the weights used: that is, to the difference between the 1937–8 pattern of working-class consumption and the 1949 pattern of personal consumption. If this factor is an important one, the relevance of the respective weights to an assesment of changes in the cost of living between 1948 and 1949 must be examined. In particular, the pre-war weights used in the Interim Index of Retail Prices may not reflect the post-war pattern of working-class consumption and may introduce a systematic bias into this index when it is used as an indication of changes in the working-class cost-of-living between 1948 and 1949. Should this be the case, the divergence between the two indices cannot be interpreted as giving an accurate account of relative changes in the cost of living between these years.

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[1] Cmd. 7933.

[2] The items in Table 22, Cmd. 7933, have been regrouped to correspond as closely as possible to the subdivisions of the Retail Price Index.

[3] Or rather, 'as many individual items as possible within each group of goods and services'. See Cmd 7933, p. 31.

[4] Charities and non-profit-making bodies are treated as persons by the White Paper.

II

In this section an attempt will be made to indicate the effect of the differences in the weights used in the construction of the two cost-of-living index numbers. Unfortunately, the nature of the problem is such that it can never be shown that a unique part of the divergence between the two index numbers can be attributed to weighting differences. This is the case even when complete knowledge of the price-relatives and weights used in each index is assumed. Either set of price-relatives may be reweighted, and each process of reweighting will only yield information about the effect of applying different sets of weights to the *same* set of price-relatives. And since the effect of reweighting depends on the correlations established between relatively heavy weights and relatively high price-relatives, it is never strictly accurate to say that a specific part of any divergence between two indices is due to weighting differences, because the effect of reweighting is not independent of the distribution of the price-relatives. However, each process of reweighting is significant in itself; thus the reweighting of the Interim Index price relatives by White Paper weights will show what the increase of the working-class cost of living would have been if the working-class pattern of consumption in 1948–9 had been similar to the personal pattern of consumption in 1949, and the reweighting of White Paper price relatives by Interim Index weights will show what the increase in the personal cost of living would have been if the personal pattern of consumption in 1948–9 had been similar to the working-class pattern of consumption in 1937–8. And the results of *both* processes of reweights are relevant to an assessment of the effect of weighting differences on the two indices.

The average price for 1949, based on the average price for 1948 as 100, shown by the Interim Index of Retail Prices, may be expressed as[1]

$$\frac{\Sigma \dfrac{p'_{49}}{p'_{June\ 47}} \, p'_{June\ 47} \, q'_{38}}{\Sigma \dfrac{p'_{48}}{p'_{June\ 47}} \, p'_{June\ 47} \, q'_{38}} \times 100$$

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[1] Throughout this paper, dashed symbols refer to prices and quantities in the Interim Index of Retail Prices, and undashed symbols to prices and quantities in the White Paper Index.

which can be reduced to

$$\frac{\Sigma \frac{p'_{49}}{p'_{48}} \; p'_{48} \; q'_{38}}{\Sigma p'_{48} \; q'_{38}} \times 100$$

Thus the weights relevant to the 1948-based index are $p'48\ q'37$. The White Paper price index for 1949, based in 1948, takes the following form :

$$\frac{\Sigma p_{49} q_{49}}{\Sigma p_{48} q_{49}} \times 100$$

which may be expressed as

$$\frac{\Sigma \frac{p_{49}}{p_{48}} \; p_{48} \, q_{49}}{\Sigma p_{48} \, q_{49}} \times 100$$

In order to reweight each index by the weights appropriate to the other, it is necessary to compute the two indices

$$\text{1.} \quad \frac{\Sigma \frac{p_{49}}{p_{48}} \; p'_{48} p'_{38}}{\Sigma \; p'_{48} \, q'_{38}} \times 100 \quad \text{and 2.} \quad \frac{\Sigma \frac{p'_{49}}{p'_{48}} \; p_{48} \, q_{49}}{\Sigma \; p_{48} \, q_{49}} \times 100$$

To the technical difficulties in assessing the effect of reweighting must be added those introduced by the incompleteness of the data available. These will be discussed with refernce to each of the indices needed for the comparisons; and the upshot of the argument is that although index 1 may be computed in some detail, granted certain not unplausible assumptions, index 2 cannot be computed with any degree of accuracy. Thus only one of the reweighting processes relevant to an assessment of the effect of weighting differences is possible, and this must be borne in mind when interpreting the results.

Index 1

To obtain index 1 it is necessary to know the price-relatives of all the individual items included in the White Paper index, and to combine these using Interim Index of Retail Prices weights appropriate to each individual price-relative. Neither the price-relatives nor the weights are known in such detail. In Table 22 of Cmd. 7933 price-relatives are given for fairly narrowly divided groups of commodities. Each one of these indices is in fact a weighted average of the price-relatives of the individual items falling within each group. But on the whole it seems plausible to assume that the groups are homogeneous, and thus that the internal weighting within the groups is relatively unimportant.[1] Thus it is assumed that $\frac{\Sigma p_{49} \, q_{49}}{\Sigma p_{48} \, q_{49}}$ for each group is approximately equal to $\Sigma \frac{p_{49}}{p_{48}}$ for the items within each group,[1] and the price-indices of Table 22 are therefore used in the construction of this index. Whilst it is recognised that this assumption is arbitrary, and may involve some inaccuracy, it can hardly be doubted that the weighting *between* detailed commodity groups is far more important than the weighting within the groups.

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[1] It must be noted that the Interim Index of Retail Prices uses such a homogeneity assumption (see Supplement to the Industrial Relations Handbook, p. 5), and therefore the inaccuracies introduced by this assumption are likely to be less important in a comparison between the two index numbers.

For the weights of index 1, an estimate has to be made of $p'_{48}\, q'_{38}$, and furthermore, these estimated weights must be those which are appropriate to the groups into which Table 22 is divided. The procedure here has been to estimate the distribution of the Interim Index of Retail Prices weights (as given in Supplement No. 2 to the Industrial Relations Handbook) between the White Paper groups. The next step is to convert these weights from $p'_{June\ 47}\, q'_{38}$ to $p'_{48}\, q'_{38}$ by applying a price index $\frac{p'_{48}}{p'_{June\ 47}}$ to the original weights. Because of the lack of correspondence between the weighting groups of the Interim Index of Retail Prices and the White Paper commodity groups, and because of the lack of information on the price-changes strictly applicable to the q'_{38} element in the Interim Index of Retail Prices weights, the estimated weights $p'_{48}\, q'_{38}$ are necessarily somewhat hazardous. But it is considered likely that the errors introduced are small compared to the differences between $p'_{48}\, q'_{38}$ and $p_{48}\, q_{49}$. The method used to obtain the weights is set out in the Appendix.

Thus index 1 will probably give a fairly accurate indication of the effect of weighting the price-relatives of the white Paper index by the weights appropriate to the Interim Index of Retail Prices.

Index 2

It is unfortunately impossible to compute this index in the same detail, since the price-relatives used in the construction of the Interim Index of Retail Prices are not known, and the only published price indices refer to commodity groups so broad that any homogeneity assumption is obviously unrealistic.[2]

The comparisons obtained by calculating Index 1 in detail are as follows :

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[1] This is particularly likely to be true in the case of groups within food which is one of the sectors of consumption in which the divergence between the two indices is very marked.

[2] The 'reweighting' effects of combining the published price-indices of the Interim Index of Retail Prices with the White Paper weight appropriate to such broad commodity groups is negligible, since the resulting Index 2 'Total' is 102.7, as compared with a 'Total' of 102.8 for the Interim Index of Retail Prices. Here it should be noted that if Index 1 is computed *on the same basis as Index* 2, i.e. if the Interim Index of Retail Prices weights for the *broad* commodity groups (those for which indices are published) are applied to comparable price-indices yielded by the White Paper, the effect of 'reweighting' is also negligable, since the Index 1 'Total' is 101.9, precisely the same as the 'Total' of the White Paper index. Thus *if* there are any significant reweighting effects, these methods are too clumsy to detect them.

TABLE II

Price-Indices for 1949, Average 1948=100

	Retail Price Index	*Index*[1]	*White Paper Index*
Food	105.4	104.2	102.7
Rent, Rates and Water Charges ...	100.5	100.7	100.7
Clothing	107.7	105.0	104.7
Fuel and Light	102.0	101.8	101.7
Household Durable Goods ...	100.6	100.9	101.0
Miscellaneous Goods	102.2	100.9	100.6
Services	100.7	101.5	101.9
Drink and Tobacco	99.3	99.9	100.3
Total	102.8	102.4	101.9

It is significant that the effect of reweighting the White Paper Index by Interim Index of Retail Prices weights is substantially greater when the reweighting procedure is carried out in detail. Thus, if the reweighting is confined to broad commodity groups the White Paper index is unchanged at 101.9,[1] whereas if each commodity group shown in Table 22 is reweighted as in the calculations leading up to Table II above, the white Paper index is raised from 101.9 to 102.4. This implies that the important (important in the sense of having a large effect on the total index) differences in weights are to be found *within* the broad commodity groups rather than *between* the broad commodity groups.

An examination of Table II shows that the rise in the reweighted ' Total ' can be entirely attributed to the relatively substantial rise in the ' Food component of the index consequent upon reweighting.[2] This indicates that the application of Interim Index of Retail Prices weights to the commodity groups within the ' Food ' component of the index has the effect of establishing a markedly greater correlation between relatively heavy weights and relatively high price-relatives than is the case when White Paper weights are used. The importance of the food component in both indices is such that the implications of this result will be examined in greater detail in the next section.

For all the other broad commodity groups included in Table II, the effect of reweighting the White Paper price-relatives by Interim Index of Retail Prices weights is relatively small. It is, however, notable that in each case the reweighted price-indices are somewhat closer to the price-indices obtained from the Interim Index of Retail Prices than were the price-indices derived from the White Paper. These results do not, of course, imply that the two sets of weights for the items within the broad commodity groups are similar, but merely that the differences between them are not such as to produce any very marked effect *when the two sets of weights are applied to the price-relatives of the White Paper index.* Thus they do not show that the effects of reweighting would be small if the two sets of weights

[1] See footnote [2] on p. 182.

[2] Thus, *if* there had been no change in the ' Food ' component consequent upon reweighting, the ' Total ' of Index I would have been 101.8 : *lower* than the ' Total ' of the White Paper Index.

were applied to the other set of price relatives, i.e. those used in the Interim Index of Retail Prices. As was pointed out above, the limitations of the published data are such that this other relevant comparison cannot be made.[1]

For Clothing, however, the divergence between the price-rise shown by the Interim Index of Retail Prices and that shown by the White Paper index is striking. And the effect of reweighting the price-relatives of the White Paper indices by Interim Index of Retail Prices weights is small. In this case, it seems that the influence of differences in the price-relatives used in the two indices must be important. And since a difference between the price-relatives supposedly indicates a difference in the rates of increase of the prices of ' working-class ' clothing and ' personal ' clothing, this implies that some or all working-class clothing prices have increased more rapidly over the period 1948–9 than clothing prices in general. This last statement, of course, assumes that the items which are priced in the two indices are representative, and it would appear that considerable care has been taken to ensure that this is the case. It also presupposes that the items which were priced were of unchanged quality.

III

The substantial rise in the reweighted ' Food ' component shows that the application of Interim Index of Retail Prices weights[2] to the price-relatives of the White Paper index has the effect of giving heavier weight to relatively high price-relatives, and giving less weight to relatively low price-relatives. This relationship emerges clearly from the following table :—

TABLE III

Commodity Group	Retail Price Index Weights	White Paper Index Weights	White Paper Price-Relatives	Weighting Difference[3]	Price Relative Difference[4]
Oils and Fats	84	41	104.7	++	+
Meat and Bacon	219	163	114.9	++	++
Bread and Cereals	180	163	104.5	++	+
Dairy Products	173	166	103.5	+	+
Beverages	51	52	100.9	—	—
Fruit	73	87	93.3	—	— —
Fish	34	39	98.7	—	—
Other Manuf. Food	31	42	101.1	—	—
Potatoes and Vegetables ...	91	137	100.0	— —	—
Sugar, Preserves, etc., ...	64	110	94.2	— —	— —
Total	1000	1000	102.7		

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[1] It should not be impracticable to publish price-indices for the individual commodity groups of the Interim Index of Retail Prices : the price-changes relevant to the old Cost of Living Index were shown in considerable detail. This would yield additional information on detailed price-movements, and would provide an invaluable basis for the interpretation of changes in the published index-numbers.

[2] The weights $p'_{48}\, q'_{38}$. See Appendix.

[3] A positive symbol indicates a heavier weight in the Interim Index of Retail Prices than in the White Paper index, and a begative symbol a lower weight. A double symbol is employed when the difference is large.

[4] A positive symbol indicates that the price-relative for the commodity group in the White Paper is higher than the weighted average increase in prices, and vice-versa. A double symbol indicates that the difference is large.

The coincidence between heavier weights and large price rises, and between smaller weights and small price increases or price falls, is remarkable. In no group is a reverse relationship established.

Here again, the reweighting procedure carried out above only tells half of the story. If the price-relatives used in the Interim Index of Retail Prices were known, another relevant comparison could be obtained by applying White Paper weights to them. But it seems practically certain that the index thus derived for ' Food ' would show a smaller increase than does the Interim Index of Retail Prices. Reweighting would only fail to have this effect if the distribution of the price-relatives in the Interim Index of Retail Prices were very peculiar indeed. And since the list of ' Food ' items covered by the Interim Index[1] is fairly comprehensive, the possibility of such a perverse distribution of price-relatives must be remote. Thus it is highly probable that a substantial part of the divergence noted in the ' Food ' indices is attributable to the effects of differences between the two sets of weights.

This conclusion is of some technical interest, but it must be noted that it provides a partial explanation of the divergence between the two *index-numbers*, and does not yield any direct information about ' real ' changes in the cost of living. The further question immediately arises: are the weights which are used in the construction of the indices those which are relevant to an estimate of changes in the food component of the cost of living between 1948 and 1949? The weights which are most appropriate to such an estimate should reflect the pattern of consumption by the ' working-class ' and by ' persons ' during these years. The weights which are in fact used reflect the pattern of consumption by the working-class in 1937–8, and by persons in 1949. Since the changes in the pattern of ' personal ' food expenditure between 1948 and 1949 were on the whole small,[2] the use of weights based on 1949 quantities in the construction of the White Paper index is appropriate to the measurement of cost of living changes between these years. In the case of the Interim Index of Retail Prices, however, the relevance of weights based on working-class expenditure in 1937–8 is by no means obvious. It might well be supposed that differences between the pre-war and post-war pattern of consumption are likely to be particularly marked within the ' Food ' group. It is therefore necessary to ' test ' the relevance of the weights used in the Interim Index of Retail Prices to an estimate of the change in the food component of the working-class cost of living. If it is found that the pre-war weights are not appropriate to post-war expenditure patterns, a bias might be introduced into the ' Food ' index. Should this be the case, the Interim Index of Retail Prices will yield an inaccurate measure of current changes in the working-class cost of living, and a comparison with the White Paper index will be misleading.

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[1] Supplement No. 2 to Industrial Relations Handbook, p. 14.

[2] For example, a calculation of $\frac{\frac{p_{49}}{p_{48}} p_{48} q_{48}}{p_{48} q_{48}}$ from White Paper data yields a 'Food' index of 102.8, as compared with the 102.7 obtained from $\frac{\frac{p_{49}}{p_{48}} p_{48} q_{49}}{p_{48} q_{49}}$.

Since no comprehensive working-class budget enquiry has been held since the war, no direct ' test ' of the Interim Index of Retail Prices weights is possible. It is, however, possible to test them indirectly by using the estimates of the distribution of *personal* expenditure published in the National Income White Paper, following the method developed by Dudley Seers.[1] The procedure is to set up the hypothesis that the weights used in the Interim Index do reflect the pattern of post-war food consumption. A rough estimate of working-class expenditure in a post-war year is made, and this expenditure is assumed to be distributed between the ' Food ' commodity groups in the proportions implied by the Interim Index weights. An expenditure-pattern conforming to the hypothesis set up is thus obtained. This hypothetical distribution is now compared with the actual distribution of personal ' Food ' expenditure in the same year. If a comparison between the two distributions shows that the hypothetical distribution of working-class food expenditure is reasonable, this test provides evidence to support the hypothesis. If the comparison gives unreasonable results, this test does not support the hypothesis, and some indication is given of the change which has occurred in the pattern of working-class food consumption.

The year chosen for this comparison is 1948. In this year, working-class income net of direct taxes may be roughly estimated as £5,450 ± 100 millions.[2] Working-class savings in this year may be ' guessed ' as falling in the range £200 ± 100 millions.[3] Subtraction yields an estimate of working-class expenditure of £5,250 ± 200 millions. It should be noted that the definition of the ' working-class ' appropriate to this estimate of expenditure is substantially wider than that adopted in the construction of the Interim Index.[4] In particular it includes, whereas the index excludes, the expenditure of unemployed persons and pensioners. The difference in definition, however, will only introduce any inaccuracy in so far as the 1937–8 food consumption patterns of those included in this wider definition was markedly different from the 1937–8 food consumption pattern of those included under the Interim Index definition. The quantitative effect of this change of definition is uncertain, but it is probable that the pre-war weight relevant to this wider definition would be higher for necessities, and lower for luxuries, than those used in the Interim Index. This qualification must be borne in mind in the following analysis.

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[1] BULLETIN, Vol. 11, p. 1ff.

[2] This very rough estimate is made by following the method adopted by Dudley Seers to obtain an estimate of working-class income in 1947. See BULLETIN, Vol. 11, p. 2.

[3] Here we are interested in savings as a deduction from income to estimate expenditure. Thus the saving relevant in this context is defined as payments into savings accounts minus withdrawals from savings accounts, and it excludes interest accruing in accounts remaining invested. The evidence available seems to indicate that the saving of the working-class through National Savings must have been very small or even negative in 1948. Indeed, a sample investigation carried out by Social Surveys, Ltd. (The Public and National Savings 1948) seems to imply that persons in the income ranges below £500 were decreasing their holdings of National Savings in the period before April 1948. The range of the savings estimate in the text should be wide enough to cover working-class savings through other institutional or non-institutional channels. It has deliberately been pitched rather high in an attempt to avoid an over-estimate of working-class food expenditure.

[4] Whose definition of the working-class covers manual workers in general and non-manual workers with wages or salaries not exceeding £250 a year (in 1937–8).

A comparison between the hypothetical distribution of working-class expenditure on food and the distribution of personal food expenditure[1] is shown in the following table.[2]

TABLE IV

Expenditure in 1948, £mn.

Commodity Group	Hypothetical working-class expenditure	Personal expenditure[1]	Implied proportion of working-class to personal expenditure
Bread and Cereals	319–344	397	.80–.87
Meat and Bacon	387–418	355	1.09–1.18
Fish	61–65	101	.60–.65
Oils and Fats	148–160	81	1.82–1.96
Surgar, Preserves and Confectionery ...	114–123	215	.53–.57
Dairy Products	306–330	360	.85–.91
Fruit	129–139	199	.65–.70
Potatoes and Vegetables	161–174	302	.53–.57
Beverages	90–97	112	.80–.87
Other Manufactured Food	54–58	100	.54.–59
Total Food	1768–1908	2221	.80–.86

Since it has been estimated that the definition of ‘ working-class ’ used in these calculations covers 80 to 85 per cent of the population,[3] the results for food as a whole implies that the per capita expenditure of the ‘ working-class ’ was just about the same as ‘non-working-class’ per capita expenditure. The proportion is somewhat higher than would be expected on general grounds,[4] and therefore it is likely that food as a whole is overweighted[5] in the Interim Index of Retail Prices. It is improbable that the change in the definition of the working-class contributes to this conclusion : indeed it has been suggested above that the wider definition would have led to heavier weighting of necessities, and thus the apparent overweighting of food noted may understate the weighting error relevant to the wider definition of the working-class.

To detect overweighting in individual commodity groups, it is assumed that the per capita expenditure by the ‘ working-class ’ on any commodity group is unlikely to be greater than the per capita expenditure of the non-working-class.[1] Thus any implied proportion of working-class expenditure greater than 80–.85 is regarded as evidence of overweighting. Table IV shows that this proportion is substantially exceeded in Oils and Fats, and Meat and Bacon. It is also exceeded in Dairy Products, while Bread and Cereals and Beverages are borderline cases. The overweighting of Meat and Bacon can be attributed to the restrictions on consumption in the post-war period. This is also partly true of Oils and Fats, though it should be noted that the implied expenditure of the 'working-class' on this commodity in 1938 was very high when compared with the white Paper estimate for personal expenditure on this commodity in the same year.[2] With dairy products, it is unlikely that restrictions on consumption are an important factor, nor can the overweighting be explained in terms of a shift in the pattern of working-class preferences. This group (and the same is true of the borderline case, Bread and Cereals) was allocated a weight on the basis of the budget enquiry which appeared implausibly high when translated into terms of 1938 working-class expenditure.[3] Thus the apparent overweighting can only partially be attributed to changes in the pattern of consumption; two of the three overweighted groups seem to have been ' overweighted ' in the original budgets.[4]

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[1] For the purposes of this table, the White Paper category of ‘ Other Personal Expenditure ’ has been distributed proportionately over the commodity groups.

[2] This comparison is between working-class expenditure implied by the weight $p'_{48}\,q'_{38}$ and personal expendiditure $p_{48}\,q_{48}$.

[3] Estimate by Dudley Seers, BULLETIN, Vol. 10, p. 183.

[4] It might appear naive to invoke general grounds in a calculation which is based on such a rough estimate of working-class expenditure. But it should be pointed out that to obtain a ‘ reasonable ’ proportion of, say, .75, working-class expenditure would have had to be estimated at £4,760 mn., and this is almost cetainly too low.

[5] Throughout this section, ‘ overweighting ’ means that the weights used in the Interim Index of Retail Prices imply an unreasonably high working-class expenditure in 1948.

It is less easy to establish a plausible criterion to detect underweighting : particularly since some upward bias is applied to each group through the overweighting of food as a whole. A proportion of working-class to personal expenditure of .55 implies that non-working-class expenditure in that group is 4.3 times as great as working-class expenditure. Proportions of this magnitude are found in Sugar, Preserves and Confectionery, in Potatoes and Vegetables, and in Other Manufactured Food. In view of the extensive per capita rationing in 1948 for the former group, such a ratio of working-class to non-working-class seems unlikely. In Potatoes and Vegetables, the proportion is much smaller than that disclosed by the pre-war budgets, and it does not seem possible that the increase in non-working-class expenditure in this group has been so much greater than that of the working-class. For the mixed bag ' Other Manufactured Foods ' no statement as to the possible errors in weighting can be made.

Thus there is no evidence to support the hypothesis that the 1937–8 weights reflect the pattern of working-class expenditure in 1948–three commodity groups are probably overweighted, and it is likely that two commodity groups are underweighted.

A comparison with Table III shows that the groups which are overweighted are those which are weighted more heavily in the Interim Index

[1] This assumption appears plausible for most commodity groups, though a greater working-class per capita expenditure might be suspected in Bread and Cereals. But the definition of this group includes cakes and biscuits, items on which working-class per capita expenditure is probably lower, so that even in this case the assumption is probably not unrealistic.

[2] See calculation by Dudley Seers, BULLETIN, Vol. 10, p. 191.

[3] Dudley Seers, BULLETIN, Vol. 10, p. 191.

[4] This does not necessarily imply that the budget weights did not reflect the 1937–8 pattern of working-class expenditure. It is at least equally likely that the White Paper estimates of personal expenditure on these items in 1938 was too low.

of Retail Prices than in the White Paper index. And those which appear to be underweighted have a smaller weight in the Interim Index. This is not a surprising result: but it does indicate that the differences in the weights do not reflect accurately differences in the pattern of expenditure in a post-war year. In particular, it indicates that the weights used in the Interim Index overstate the extent to which the working-class has directed its expenditure towards those commodities which show the largest increase in price and understates the extent to which it directed its expenditure towards those commodities which show the smallest increase.

Thus there is an upward bias in the ' Food ' index of the Interim Index of Retail Prices when it is used as an indicator of changes in the food component of the working-class cost of living between 1948 and 1949. Furthermore, this bias is exaggerated in the ' Total ' index because food as a whole is overweighted. It is impossible to estimate the magnitude of this bias, firstly because it is not known precisely to what extent commodity groups are over- or underweighted, and secondly because the effect of over- or underweighting cannot be estimated in the absence of detailed information on the price-relatives used in the Interim Index. But the direction of the bias is evident, and both the marked effect of weighting differences in contributing to the sharper rise in the Interim ' Food ' index, and the failure of weighting differences to correspond to differences in the pattern of expenditure, indicate that the bias may be substantial.

In conclusion, it can be said that although the working-class cost of living may have risen faster than the personal cost of living over the period 1948–9—for instance, there is some evidence to show that ' working-class ' clothing prices have risen faster than ' personal ' clothing prices—yet the Interim Index of Retail Prices almost certainly overstates the magnitude of the increase of the working-class cost of living, largely because of a systematic bias within the food component of the Index. This appears as a strange contrast to the downward bias which was deliberately imparted to the old Cost-of-Living Index, but its importance in present-day circumstances should not be underestimated. Thus, for example, ' real-wage ' calculations are increasingly based on the Interim Index of Retail Prices, and a crude comparison between this index and the Index of Weekly Wage Rates[1] indicates that ' real wages ' were constant over the period 1948–9. In fact, because of the upward bias in the former index, it is almost certain that wage-rates rose faster than the working-class cost of living over this period, and that therefore ' real wages ' were slightly rising. Or again, whilst the Government's concern with the level of the Index is understandable, it would be unfortunate if such considerations had any influence on subsidy policy.[2] The present situation is that the lowering of certain specific subsidies (e.g., on butter and bacon) would, because of weighting anomalies, have an effect on the 'working-class' cost of living *index* out of proportion to their effect on the *actual* 'working-class' cost of living.

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[1] And even though economists may stress that such a calculation is ' crude ', it remains the only practical way of assessing *current* changes in real wages: the calculation will be made and interpreted as significant.

[2] Thus *The Economist* calculates the ' Savings achieved [through subsidy reductions] per unit Increase in Index of Retail Prices' and comments: ' The Minister of Food last week did not achieve the maximum saving in his rearrangement of the subsidies . . . for a total rise of 0.55 of a point in the index, a total saving of only £18 million has been secured. Better results could have been achieved by halving the meat subsidy.' *The Economist*, April 15th, 1950.

In general, the importance of the Interim Index of Retail Prices to-day is such that every effort should be made to ensure that it provides a reasonably accurate guide to *current* changes in the working-class cost of living. If it is impracticable to hold a post-war budget enquiry to determine post-war weights, then at least the Ministry of Labour and National Service should periodically publish more detailed information on price-changes in individual commodity groups to enable a more relevant assessment of current changes in the working-class cost of living to be made.

D. G. Holland.

APPENDIX

The Weights Used in the Calculation of Index 1

The task here was to estimate the distribution of the weights used in the Interim Index of Retail Prices between the commodity groups shown by the White Paper. These weights ($p'_{June\ 47}\, q'_{38}$) had then to be converted to $p'_{48}\, q_{38}'$. The distributions obtained were as follows.

Interim Index of Retail Prices Weights

White Paper Commodity Groups	$p'_{June\ 47}\, q'_{38}$	$p'_{48}\, q'_{38}$[9]
1. Food		
(a) Household Expenditure :		
Bread and Cereals	65	63
Meat and Bacon	78	77
Fish	12	12
Oils and Fats	31	29
Sugar, Preserves and Confectionery	19	22
Dairy Products	56	60
Fruit	27	26
Potatoes and Vegetables	31	32
Beverages	18	18
Other Manufactured Food	11[1]	11
Total	348	350
(b) Other Personal Expenditure	0[2]	0
Total Food	348	350
2. Alcoholic Drink		
(a) Beer	91[3]	97
(b) Wines, spirits, cider, etc.	10[3]	11
3. Tobacco		
(a) Cigarettes	89[3]	86
(b) Pipe tobacco, cigars and snuff	27[3]	26
4. Rent, rates and water charges	88	81
5. Fuel and Light		
(a) Coal	40[4]	41
(b) Electricity	6	6
(c) Gas	14	14
(d) Other	5[4]	5
6. Durable Household Goods ...		
(a) Furniture and furnishings	41[5]	42
(b) Hardware	24[5]	23
7. Other Household Goods		
(a) Soap	8	9
(b) Matches		
(c) Other	9	9
8. Clothing		
(a) Footwear	20	21
(b) Other clothing		
(i) Men's and boys' wear	36[7]	36
(ii) Women's, girls and infants' wear	41[7]	42
9. Book, newspapers and magazines :		
(a) Books	2	2
(b) Newspapers		
(c) Magazines	8[8]	8
10. Private Motoring and Travel	25	25
11. Communication Services	9	8
12. Entertainments	18	17
13. Other Services	27	27
14. Other Goods	14[5,6,8]	14
15. Total	1000	1000

[1] The definition of ' Miscellaneous Manufactured Foods ' in the Interim Index is considerably broader than the definition of ' Other Manufactured Food ' in the White Paper. The weights of those items in the Interim Index category which can be identified as appropriate to other White Paper commodity groups have been allocated to those groups. The weights for the items of ' Miscellaneous Manufactured foods ' were derived from the detailed breakdown of working-class expenditure given in Dudley Seers' paper ' The Increase in the Working-Class Cost of Living ', BULLETIN, Vol. 10, p. 147.

[2] This group is not explicitly weighted in the Interim Index. The price-movements of such items as ' Meals out ' and ' Holiday expenditure ' are assumed to correspond with those of all the items in the index as a whole. See *Supplement No.* 2 to *Industrial Relations Handbook*, p. 6 note.

[3] The allocation of weights to the groups in Alcoholic Drink and Tobacco was somewhat arbitrary. In the case of Tobacco price indices for 1947 from Cmd. 7371 were applied to the breakdown given in the Supplement (p. 6) and the total thus obtained was reduced to the Tobacco weight of the Interim Index. For drink a similar procedure was followed, but some attempt was made to allow for the different method of calculating Beer prices adopted in the White Paper.

[4] A weight of 1 was transferred from Coal to Other, since Coke is included in the latter group in the White Paper.

[5]. The weight of 24 for 'Appliances ' in the Interim Index was allocated as follows : 3 to Furniture and Furnishings, 15 to Hardware, 6 to Other Goods.

[6] The weight of 7 for Medicines and Toilet Requisites was allocated to Other Goods.

[7] Of the weight of 5 for Clothing materials, a weight of 2 has been added to men's and boys' wear, and a weight of 3 to women's, girls' and infants' wear. Of the weight of 11 for Children's outer clothing and children's underclothing, a weight of 4 has been added to men's and boys' wear, and a weight of 7 to women's, girls' and infants' wear.

[8] A weight of 1 has been transferred from Newspapers and Magazines to Other Goods, since stationery is included in this latter group under the White Paper definition.

[9] The conversion of $p'_{48}q'_{38}$ is attended with some difficulty, since Interim Index price indices are not available for the detailed commodity groups, but only for the broad commodity groups for which indices are published. The procedure has been to apply Interim Index price indices to the broad commodity groups, to obtain the $p'_{48}q'_{38}$ weight for the group as a whole. For the detailed groups, White Paper price relatives are used, and the weights thus obtained are corrected to yield the weight for the groups as a whole computed from Interim Index price indices. This method is, of course, rather unsatisfactory, but the changes in weights are on the whole very small, and it is unlikely that any substantial error is introduced.

ERRATA

BULLETIN : No. 6, June 1950

Page 175, Table VII, last column. For 410 *read* 470.

Page 177. The numerator should *read* $\Sigma p_{48} q_{38}$ instead of $\Sigma p_{48} q_{48}$

pp 193-194 deleted, advertising